

### **REMARKS/ARGUMENTS**

Applicant affirms the election of Group I, claims 1-5, 18-22, with traverse.

Reconsideration and removal of the restriction requirement is respectfully requested. It is believed that the application may be most efficiently examined if all groups were examined at one time, MPEP 803. If the restriction requirement is removed, reinstatement of claims 16, 17 is respectfully requested.

Claims 1-2, 4-5, 8 have been rejected under 35 U.S.C. §102(b) over Crothers, Jr. U.S. Patent 5,169,604. Claim 3 has been rejected under 35 U.S.C. §103(a) over Crothers '604. Claims 6, 7, 9-15, 18-22 have been rejected under 35 U.S.C. §103(a) over Crothers '604 in view of Foster et al. U.S. Patent 4,239,733. Reconsideration in view of the above amendment and the following remarks is respectfully requested.

#### **Claim 1**

For the Examiner's convenience and to facilitate review, claim 1 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

1. *A serviceable exhaust aftertreatment device (10) for diesel exhaust flowing axially(12, 14) along an axial flowpath (16) from upstream to downstream, comprising an inlet cylindrical body (22) providing an inlet section, a central cylindrical body (24) providing an exhaust aftertreatment central section, and an outlet cylindrical body (26) providing an outlet section, said cylindrical bodies being axially colinearly aligned along said axis (16), with said central cylindrical body (24) axially between said inlet and outlet cylindrical bodies (22, 26) and removable therefrom for servicing, each of said cylindrical bodies (22, 24, 26) having a main body outer profile of given outer diameter (28), said inlet cylindrical body (22) mating with said central cylindrical body (24) at a first junction (26), said central cylindrical body (24) mating with said outlet cylindrical body (26) at a second junction (32), each of said*

*junctions (30, 32) having an outer profile of increased outer diameter (34), the increase in outer diameter from said given outer diameter (28) being less than 2%.*

In rejecting claim 1, the Examiner has applied Crothers '604, namely the inlet cylindrical body providing an inlet section 24, a central cylindrical body 28 providing an exhaust aftertreatment central section, and an outlet cylindrical body 26 providing an outlet section, and noting that such cylindrical bodies are axially colinearly aligned along the axis, with the central cylindrical body 28 axially between the inlet and outlet cylindrical bodies 24 and 26.

In response, it is respectfully noted that claim 1 requires *said central cylindrical body (24) axially between said inlet and outlet cylindrical bodies (22, 26) and removable therefrom for servicing*. In contrast, central cylindrical body 28 in Crothers '604 is not removable from the inlet and outlet cylindrical bodies 24 and 26. Instead, servicing in the Crothers '604 assembly is accomplished by removing cover member 22 from opening 30 of central cylindrical 28, providing access to the catalytic carrier assembly therein, Col. 4, lines 22-23, 36-40, Col. 6, lines 36-40. Central cylindrical body 28 is fixed, Col. 4, line 8. The requirements of claim 1 thus are not met by Crothers '604.

Furthermore, to modify Crothers '604 to make central cylindrical body 28 removable from inlet and outlet cylindrical bodies 24 and 26 would be contrary to the teachings thereof. As noted in Crothers '604 at Col. 7, lines 22-27:

*The ability to easily remove the catalytic carrier assembly while at the same time allowing the fixed housing unit to remain affixed in the exhaust path is a particularly desirable feature since periodic servicing of the apparatus may be performed with minimum downtime.*

It is thus seen that the presently defined subject matter of claim 1 is the opposite of Crothers '604. Claim 1 requires that the central cylindrical body (24) be removable from the inlet and outlet cylindrical bodies (22, 26). This is the opposite of Crothers '604 having a *fixed central portion 28* (Col. 4, line 8) intentionally provided as a *fixed housing unit to remain affixed in the exhaust path* (Col. 7, line 24) which *is a particularly desirable feature* (Col. 7, line 25). To

modify Crothers '604 to arrive at the subject matter defined in claim 1 would require obliterational modification of the teachings of Crothers '604. It is respectfully submitted that obliterational modification of a reference's teachings is not a supportable basis for rejection.

Consideration and allowance of claim 1 is earnestly solicited.

### **Claims 2, 3**

Claims 2 and 3 depend from claim 1 and are believed allowable for the reasons noted above. Furthermore, these claims define subcombinations which are believed allowable.

### **Claim 4**

For the Examiner's convenience and to facilitate review, claim 4 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

4. *A serviceable exhaust aftertreatment device (10) for exhaust flowing axially (12, 14) along an axial flowpath (16) from upstream to downstream, comprising an inlet cylindrical body (22) providing an inlet section, a central cylindrical body (24) providing an exhaust aftertreatment central section, and an outlet cylindrical body (26) providing an outlet section, said cylindrical bodies (22, 24, 26) being axially colinearly aligned along said axis (16), with said central cylindrical body (24) axially between said inlet and outlet cylindrical bodies (22, 26) and removable therefrom for servicing, said inlet and central cylindrical bodies (22, 24) being mated and sealed to each other without a gasket therebetween, said central and outlet cylindrical bodies (24, 26) being mated and sealed to each other without a gasket therebetween.*

Claim 4 requires that the central cylindrical body (24) be removable from the inlet and outlet cylindrical bodies (22, 26) for servicing, and is believed allowable for the reasons noted above.

Claim 4 further requires that the inlet and central cylindrical bodies (22, 24) be mated and sealed to each other without a gasket therebetween, and that the central and outlet cylindrical bodies (24, 26) be mated and sealed to each other without a gasket therebetween. In contrast, in Crothers '604 the removable portions of the assembly do have gaskets when mounted in their closed position, e.g. 38 and 42.

Consideration and allowance of claim 4 is respectfully requested.

#### **Claim 5**

Claim 5 depends from claim 4 and is believed allowable for the reasons noted above. Furthermore, claim 5 defines a subcombination which is believed allowable.

#### **Claim 6**

For the Examiner's convenience and to facilitate review, amended claim 6 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

6. *The exhaust aftertreatment device according to claim 5 wherein said inlet and central cylindrical bodies (22, 24) have first and second structurally rigidizing beads (40, 42), respectively, at axially distally opposite upstream and downstream ends of said first annulus (36), and wherein said central and outlet cylindrical bodies (24, 26) have third and fourth structurally rigidizing beads (44, 46), respectively, at axially distally opposite upstream and downstream ends of said second annulus (38), wherein said first and second beads (40, 42) extend annularly in a closed-loop around the entire circumference of said first annulus (36), and said third and fourth beads (44, 46) extend annularly in a closed-loop around the entire circumference of said second annulus (38).*

Claim 6 depends from claim 5 and is believed allowable for the reasons noted above. Furthermore, claim 6 has been amended to require that the first and second beads (40, 42) extend annularly in a closed-loop around the entire circumference of the first annulus (36),

and that the third and fourth beads (44, 46) extend annularly in a closed-loop around the entire circumference of the second annulus (38).

The Examiner notes that Crothers '604 fails to disclose the rigidizing beads, and cites Foster '733 for teaching a plurality of annular ribs or beads 54, 56 and 58, 60, and that it would have been obvious in view of Foster '733 to modify Crothers '604 with rigidizing beads as taught in Foster '733.

In response, it is respectfully noted that beads 54, 56, 58, 60 in Foster '733 extend only partially around the circumference and do not extend in a closed-loop therearound, nor can such beads extend annularly around the entire circumference because of the flanges 32, 33, 34, 35 extending transversely thereto and preventing even a proposed modification to extend the beads annularly in a closed-loop around the entire circumference.

Consideration and allowance of amended claim 6 is respectfully requested.

### **Claim 7**

For the Examiner's convenience and to facilitate review, amended claim 7 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

7. *A serviceable exhaust aftertreatment device (10) for exhaust flowing axially (12, 14) along an axial flowpath (16) from upstream to downstream, comprising an inlet cylindrical body (22) providing an inlet section, a central cylindrical body (24) providing an exhaust aftertreatment central section, and an outlet cylindrical body (26) providing an outlet section, said cylindrical bodies (22, 24, 26) being axially colinearly aligned along said axis (16), with said central cylindrical body (24) axially between said inlet and outlet cylindrical bodies (22, 26) and removable therefrom for servicing, said inlet and central cylindrical bodies (22, 24) being mated to each other along a first axially extending annulus (36), said central and outlet cylindrical bodies (24, 26) being mated to each other along a second axially extending annulus (38), said inlet and central cylindrical bodies (22, 24) having first and second raised annular ribs (40, 42) providing first and second*

*structurally rigidizing beads (40, 42), respectively, said first and second beads (40, 42) being axially nonoverlapped and axially spaced by said first annulus (36) therebetween, said central and outlet cylindrical bodies (24, 26) having third and fourth raised annular ribs (44, 46) providing third and fourth structurally rigidizing beads (44, 46), respectively, said third and fourth beads (44, 46) being axially nonoverlapped and axially spaced by said second annulus (38) therebetween, wherein said first and second beads (40, 42) extend annularly in a closed-loop around the entire circumference of said first annulus (36), and said third and fourth beads (44, 46) extend annularly in a closed-loop around the entire circumference of said second annulus (38).*

Claim 7 requires that the central cylindrical body (24) be axially between the inlet and outlet cylindrical bodies (22, 26) and removable therefrom for servicing. Claim 7 requires that the first and second beads (40, 42) be axially nonoverlapped and axially spaced by the noted first annulus (36) therebetween, and that the third and fourth beads (34, 36) be axially nonoverlapped and axially spaced by the noted second annulus (38) therebetween. Amended claim 7 further requires that the first and second beads (30, 32) extend annularly in a closed-loop around the entire circumference of the first annulus (36), and that the third and fourth beads (44, 46) extend annularly in a closed-loop around the entire circumference of the second annulus (38). These distinctive limitations are not met by the references, and the defined combination is believed allowable thereover.

Consideration and allowance of claim 7 is respectfully requested.

#### **Claim 8**

For the Examiner's convenience and to facilitate review, claim 8 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

8. *A serviceable exhaust aftertreatment device (10) for exhaust flowing axially (12, 14) along an axial flowpath (16) from*

*upstream to downstream, comprising an inlet cylindrical body (22) providing an inlet section, a central cylindrical body (24) providing an exhaust aftertreatment central section and an outlet cylindrical body(26) providing an outlet section, said cylindrical bodies (22, 24, 26) being axially colinearly aligned along said axis (16), with said central cylindrical body (24) being axially between said inlet and outlet cylindrical bodies (22, 26) and removable therefrom for servicing, said inlet cylindrical body (22) having distally opposite upstream and downstream axial ends (48, 50), said central cylindrical body (24) having distally opposite upstream and downstream axial ends (52, 54), said outlet cylindrical body (26) having distally opposite upstream and downstream axial ends (56, 58), said downstream end (50) of said inlet cylindrical body (22) engaging said upstream end (52) of said central cylindrical body (24) in axial sliding telescoped relation, said downstream end (54) of said central cylindrical body (24) engaging said upstream end (56) of said outlet cylindrical body (26) in axial sliding telescoped relation, such that said exhaust aftertreatment device (10) is serviced by axially sliding said inlet and central cylindrical bodies (22, 24) away from each other and axially sliding said central and outlet cylindrical bodies (22, 24) away from each other.*

Claim 8 requires that the central cylindrical (24) be axially between the inlet and outlet cylindrical bodies (22, 26) and removable therefrom for servicing. Claim 8 requires that the exhaust aftertreatment device (10) be serviced by axially sliding the inlet and central cylindrical bodies (22, 24) away from each other and axially sliding the central and outlet cylindrical bodies (24, 26) away from each other. These limitations are not met by the references, and the defined combination is believed allowable thereover. Furthermore, claim 8 is believed allowable for the reasons noted above.

Consideration and allowance of claim 8 is respectfully requested.

**Claim 9**

For the Examiner's convenience and to facilitate review, claim 9 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

9. *The exhaust aftertreatment device according to claim 8 wherein said downstream end (50) of said inlet cylindrical body (22) has a beaded construction comprising a first raised annular rib (40) of increased radial height (34) and a first annular flange (60) extending axially downstream therefrom, said upstream end (52) of said central cylindrical body (24) has a beaded construction comprising a second raised annular rib (42) of increased radial height (34) and a second annular flange (62) extending axially upstream therefrom, said downstream end (54) of said central cylindrical body (24) has a beaded construction comprising a third raised annular rib (44) of increased radial height (34) and a third annular flange (64) extending axially downstream therefrom, said upstream end (56) of said outlet cylindrical body (26) has a beaded construction comprising a fourth raised annular rib (46) of increased radial height (34) and a fourth annular flange (66) extending axially upstream therefrom, wherein said first and second annular flanges (60, 62) engage in axial sliding telescoped relation without axial overlap of said first and second raised annular ribs (40, 42), and said third and fourth annular flanges (64, 66) engage in axial sliding telescoped relation without axial overlap of said third and fourth annular ribs (44, 46), whereby to permit servicing of said exhaust aftertreatment device (10) by axial withdrawal and insertion of said cylindrical bodies (22, 24, 26).*

Claim 9 depends from claim 8 and is believed allowable for the reasons noted. Furthermore, claim 9 requires a combination wherein the defined first and second annular flanges (60, 62) engage in axial sliding telescoped relation without axial overlap of the first and



second raised annular ribs (40, 42), and the defined third and fourth annular flanges (64, 66) engage in axial sliding telescoped relation without axial overlap of the third and fourth annular ribs (44, 46), whereby to permit servicing of the exhaust aftertreatment device (10) by axial withdrawal and insertion of the cylindrical bodies (22, 24, 26). This is not taught in the references.

Consideration and allowance of claim 9 is respectfully requested.

#### **Claim 10**

For the Examiner's convenience and to facilitate review, claim 10 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

*10. The exhaust aftertreatment device according to claim 9 wherein said inlet cylindrical body (22) has an axially extending sidewall (68) having a double shoulder construction comprising a first raised shoulder (70) of first increased radial height (72) and a second raised shoulder (74) of second increased radial height (34), said second raised shoulder (74) providing said first raised annular rib (40), said second increased radial height (34) being greater than said first increased radial height (72), said central cylindrical body (24) has an axially extending sidewall (76) having a double shoulder construction at said upstream end (52) comprising a third raised shoulder (78) of third increased radial height (72) and a fourth raised shoulder (80) of fourth increased radial height (34), said fourth raised shoulder (80) providing said second raised annular rib (42), said fourth increased radial height (34) being greater than said third increased radial height (72), said sidewall (76) of said second cylindrical body (24) having another double shoulder construction at said downstream end (54) comprising a fifth raised shoulder (82) of fifth increased radial height (72) and a sixth raised shoulder (84) of sixth increased radial height (34), said sixth raised shoulder (84) providing said third raised annular rib (44), said sixth*

*increased radial height (34) being greater than said fifth increased radial height (72), said outlet cylindrical body (26) has an axially extending sidewall (86) having a double shoulder construction comprising a seventh raised shoulder (88) of seventh increased radial height (72) and an eighth raised shoulder (90) of eighth increased radial height (34), said eighth raised shoulder (90) providing said fourth raised annular rib (46), said eighth increased radial height (34) being greater than said seventh increased radial height (72).*

Claim 10 depends from claim 9 and is believed allowable for the reasons noted above. Furthermore, claim 10 requires the particularly defined shoulder construction including the noted eight raised shoulders and the particularly defined heights thereof and the defined four raised annular ribs. It is respectfully submitted that this structural combination is not reasonably taught in the references without the aid of applicant's specification disclosure.

Consideration and allowance of claim 10 is respectfully requested.

#### **Claim 11**

For the Examiner's convenience and to facilitate review, claim 11 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

*11. The exhaust aftertreatment device according to claim 10 wherein said inlet cylindrical body sidewall (68) has inner and outer surfaces (92, 94), said outer surface (94) of said inlet cylindrical body sidewall (68) at said first flange (60) has a radial height (28) less than the radial height (34) of said outer surface (94) of said inlet cylindrical body sidewall (68) at said second shoulder (74) and less than or equal to the radial height (72) of said outer surface (94) of said inlet cylindrical body sidewall (68) at said first shoulder (70), said central cylindrical body sidewall (76) has inner and outer surfaces (96, 98), said outer surface (98) of said central cylindrical body sidewall (76) at said second flange (62) has a radial height (72) less than the radial height (34) of said outer*

*surface (98) of said central cylindrical body sidewall (76) at said fourth shoulder (80) and less than or equal to the radial height (72) of said outer surface (98) of said central cylindrical body sidewall (76) at said third shoulder (78), said outer surface (98) of said central cylindrical body sidewall (76) at said third flange (64) has a radial height (72) less than the radial height (34) of said outer surface (98) of said central cylindrical body sidewall (76) at said sixth shoulder (84) and less than or equal to the radial height (72) of said outer surface (98) of said central cylindrical body sidewall (76) at said fifth shoulder (82), said outlet cylindrical body sidewall (86) has inner and outer surfaces (100, 102), said outer surface (102) of said outlet cylindrical body sidewall (86) at said fourth flange (66) has a radial height (28) less than the radial height (34) of said outer surface (102) of said outlet cylindrical body sidewall (86) at said eighth shoulder (90) and less than or equal to the radial height (72) of the outer surface (102) of said outlet cylindrical body sidewall (86) at said seventh shoulder (88).*

Claim 11 depends from claim 10 and is believed allowable for the reasons noted above. Furthermore, claim 11 defines specific inter-relational characteristics and limitations of the flanges, shoulders, and heights.

Consideration and allowance of claim 11 is respectfully requested.

### **Claim 12**

For the Examiner's convenience and to facilitate review, claim 12 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

*12. The exhaust aftertreatment device according to claim 10 wherein said inlet cylindrical body sidewall (68) has inner and outer surfaces (92, 94), said inner surface (92) of said inlet cylindrical body sidewall (68) at said first flange (60) has a radial height (104) less than the radial height (106) of said inner surface (92) of said inlet cylindrical*

*body sidewall (68) at said second shoulder (74) and less than or equal to the radial height (108) of said inner surface (92) of said inlet cylindrical body sidewall (68) at said first shoulder (70), said central cylindrical body sidewall (76) has inner and outer surfaces (96, 98), said inner surface (96) of said central cylindrical body sidewall (76) at said second flange (62) has a radial height (108) less than the radial height (106) of said inner surface (96) of said central cylindrical body sidewall (76) at said fourth shoulder (80) and less than or equal to the radial height (108) of said inner surface (96) of said central cylindrical body sidewall (76) at said third shoulder (78), said inner surface (96) of said central cylindrical body sidewall (76) at said third flange (64) has a radial height (108) less than the radial height (106) of said inner surface (96) of said central cylindrical body sidewall (76) at said sixth shoulder (84) and less than or equal to the radial height (108) of said inner surface (96) of said central cylindrical body sidewall (76) at said fifth shoulder (82), said outlet cylindrical body sidewall (86) has inner and outer surfaces (100, 102), said inner surface (100) of said outlet cylindrical body sidewall (86) at said fourth flange (66) has a radial height (104) less than the radial height (106) of said inner surface (100) of said outlet cylindrical body sidewall (86) at said eighth shoulder (90) and less than or equal to the radial height (108) of said inner surface (100) of said outlet cylindrical body sidewall (86) at said seventh shoulder (88).*

Claim 12 depends from claim 10 and is believed allowable for the reasons noted above. Furthermore, claim 12 defines a combination of specific inter-relational characteristics and limitations of the flanges, shoulders, and heights.

Consideration and allowance of claim 12 is respectfully requested.

**Claim 13**

For the Examiner's convenience and to facilitate review, claim 13 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

*13. The exhaust aftertreatment device according to claim 10 wherein said first, third, fifth and seventh increased radial heights (72 at the noted respective first, third, fifth, seventh shoulders 70, 78, 82, 88) are substantially equal to each other, and wherein said second, fourth, sixth and eighth increased radial heights (34 at the noted respective second, fourth, sixth, eighth shoulders 74, 80, 84, 90) are substantially equal to each other.*

Claim 13 depends from claim 10 and is believed allowable for the reasons noted above. Furthermore, claim 13 defines a combination requiring that the first, third, fifth and seventh increased radial heights (72 at the noted respective first, third, fifth, seventh shoulders 70, 78, 82, 88) are substantially equal to each other, and that the second, fourth, sixth and eighth increased radial heights (34 at the noted respective second, fourth, sixth, eighth shoulders 74, 80, 84, 90) are substantially equal to each other.

Consideration and allowance of claim 13 is respectfully requested.

**Claim 14**

For the Examiner's convenience and to facilitate review, claim 14 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

*14. The exhaust aftertreatment device according to claim 10 wherein said inlet cylindrical body sidewall (68) has inner and outer surfaces (92, 94), said outer surface (94) of said inlet cylindrical body sidewall (68) at said first flange (60) has a radial height (28) less than the radial height (34) of said outer surface (94) of said inlet cylindrical body sidewall (68) at said second shoulder (74) and less than or equal to the radial height (72) of said outer surface (94) of said inlet cylindrical body sidewall (68) at said first shoulder (70), said central cylindrical body*

*sidewall (76) has inner and outer surfaces (96, 98), said outer surface (98) of said central cylindrical body sidewall (76) at said second flange (62) has a radial height (72) less than the radial height (34) of said outer surface (98) of said central cylindrical body sidewall (76) at said fourth shoulder (80) and less than or equal to the radial height (72) of said outer surface (98) of said central cylindrical body sidewall (76) at said third shoulder (78), said outer surface (98) of said central cylindrical body sidewall (76) at said third flange (64) has a radial height (72) less than the radial height (34) of said outer surface (98) of said central cylindrical body sidewall (76) at said sixth shoulder (84) and less than or equal to the radial height (72) of said outer surface (98) of said central cylindrical body sidewall (76) at said fifth shoulder (82), said outlet cylindrical body sidewall (86) has inner and outer surfaces (1001, 102), said outer surface (102) of said outlet cylindrical body sidewall (86) at said fourth flange (66) has a radial height (28) less than the radial height (34) of said outer surface (102) of said outlet cylindrical body sidewall (86) at said eighth shoulder (90) and less than or equal to the radial height (72) of the outer surface (102) of said outlet cylindrical body sidewall (86) at said seventh shoulder (88), said inner surface (92) of said inlet cylindrical body sidewall (68) at said first flange (60) has a radial height (104) less than the radial height (106) of said inner surface (29) of said inlet cylindrical body sidewall (68) at said second shoulder (74) and less than or equal to the radial height (108) of said inner surface (92) of said inlet cylindrical body sidewall (68) at said first shoulder (70), said inner surface (96) of said central cylindrical body sidewall (76) at said second flange (62) has a radial height (108) less than the radial height (106) of said inner surface (96) of said central cylindrical body sidewall (76) at said fourth shoulder (80) and less than or equal to the radial height (108) of said inner surface (96) of said central cylindrical body sidewall (76) at said third shoulder (78), said inner surface (96) of said*

*central cylindrical body sidewall (76) at said third flange (64) has a radial height (108) less than the radial height (106) of said inner surface (96) of said central cylindrical body sidewall (76) at said sixth shoulder (84) and less than or equal to the radial height (108) of said inner surface (96) of said central cylindrical body sidewall (76) at said fifth shoulder (82), said inner surface (100) of said outlet cylindrical body sidewall (86) at said fourth flange (66) has a radial height (104) less than the radial height (106) of said inner surface (100) of said outlet cylindrical body sidewall (86) at said eighth shoulder (90) and less than or equal to the radial height (108) of said inner surface (100) of said outlet cylindrical body sidewall (86) at said seventh shoulder (88), the radial height of said outer surface of said sidewall of one of said first and second flanges (60, 62) is substantially equal to the radial height of said inner surface of said sidewall of the other of said first and second flanges (60, 62), the radial height of said outer surface of said sidewall of one of said third and fourth flanges (64, 66) is substantially equal to the radial height of said inner surface of said sidewall of the other of said third and fourth flanges (64, 66).*

Claim 14 depends from claim 10 and is believed allowable for the reasons noted above. Furthermore, claim 14 defines a specific structural subcombination as set forth in detail above.

Consideration and allowance of claim 14 is respectfully requested.

#### **Claim 15**

Claim 15 depends from claim 10 and is believed allowable for the reasons noted above. Furthermore, claim 15 defines a subcombination which is believed allowable.

**Claim 18**

For the Examiner's convenience and to facilitate review, claim 18 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

18. *Cylindrical bodies configured for coupling, comprising first and second cylindrical bodies (22, 24) axially colinearly aligned along an axis (16) and engaging each other in axial sliding telescoped relation, said first cylindrical body having a beaded construction comprising a first raised annular rib (40) of increased radial height (34) and a first annular flange (60) extending axially therefrom, said second cylindrical body (24) having a beaded construction comprising a second raised annular rib (42) of increased radial height (34) and a second annular flange (62) extending axially therefrom, said first and second annular flanges (60, 62) engaging in axial sliding telescoped relation without axial overlap of said first and second raised annular ribs (40, 42), said first cylindrical body (22) having an axially extending sidewall (68) having a double shoulder construction comprising a first raised shoulder (70) of first increased radial height (34) and a second raised shoulder (74) of second increased radial height (34), said second raised shoulder (74) providing said first raised annular rib (40), said second increased radial height (34) being greater than said first increased radial height (72), said second cylindrical body (24) having an axially extending sidewall (76) having a double shoulder construction comprising a third raised shoulder (78) of third increased radial height (72) and a fourth raised shoulder (80) of fourth increased radial height (34), said fourth raised shoulder (80) providing said second raised annular rib (42), said fourth increased radial height (34) being greater than said third increased radial height (72).*

Claim 18 defines a particular structural combination requiring: first and second cylindrical bodies (22, 24) axially collinearly aligned along an axis (16) and engaging each other



in axial sliding telescoped relation; the first cylindrical body (22) having a beaded construction including a first raised annular rib (40) of increased radial height (34) and a first flange (60) extending axially therefrom; the second cylindrical body (24) having a beaded construction including a second raised annular rib (42) of increased radial height (34) and a second annular flange (62) extending axially therefrom; the first and second annular flanges (60, 62) engaging in axial sliding telescoped relation without axial overlap of the first and second raised annular ribs (40, 42); the first cylindrical body (22) having an axially extending sidewall (68) having a double shoulder construction including a first raised shoulder (70) of first increased radial height (72) and a second raised shoulder (74) of second increased radial height (34); the second raised shoulder (74) providing the first raised annular rib (40); the second radial height (34) being greater than the first radial height (72); the second cylindrical body having an axially extending sidewall (76) having a double shoulder construction including a third raised shoulder (78) of third increased radial height (72) and a fourth raised shoulder (80) of fourth increased radial height (34); the fourth raised shoulder (80) providing the second raised annular rib (42); the fourth increased radial height (34) being greater than the third increased radial height (72). It is respectfully submitted that this structural combination is not reasonably suggested in the references.

Consideration and allowance of claim 18 is respectfully requested.

#### **Claim 19**

For the Examiner's convenience and to facilitate review, claim 19 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

*19. The cylindrical bodies according to claim 18 wherein said first cylindrical body sidewall (68) has inner and outer surfaces (92, 94), said outer surface (94) of said first cylindrical body sidewall (68) at said first flange (60) has a radial height (28) less than the radial height (34) of said outer surface (94) of said first cylindrical body sidewall (68) at said second shoulder (74) and less than or equal to the radial height (72) of said outer surface (94) of said first cylindrical body sidewall (68) at said first shoulder (70), said second cylindrical body sidewall (76) has inner*

*and outer surfaces (96, 98), said outer surface (98) of said second cylindrical body sidewall (76) at said second flange (62) has a radial height (72) less than the radial height (34) of said outer surface (98) of said second cylindrical body sidewall (76) at said fourth shoulder (80) and less than or equal to the radial height (72) of said outer surface (98) of said second cylindrical body sidewall (76) at said third shoulder (78).*

Claim 19 depends from claim 18 and is believed allowable for the reasons noted above. Furthermore, claim 19 defines a further specific structural subcombination as noted above in detail.

Consideration and allowance of claim 19 is respectfully requested.

#### **Claim 20**

For the Examiner's convenience and to facilitate review, claim 20 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

20. *The cylindrical bodies according to claim 18 wherein said first cylindrical body sidewall (68) has inner and outer surfaces (92, 94), said inner surface (42) of said first cylindrical body sidewall (68) at said first flange (60) has a radial height (104) less than the radial height (106) of said inner surface (92) of said first cylindrical body sidewall (68) at said second shoulder (74) and less than or equal to the radial height (108) of said inner surface (92) of said first cylindrical body sidewall (68) at said first shoulder (70), said second cylindrical body sidewall (76) has inner and outer surfaces (96, 98), said inner surface (96) of said second cylindrical body sidewall (76) at said second flange (62) has a radial height (108) less than the radial height (106) of said inner surface (96) of said second cylindrical body sidewall (76) at said fourth shoulder (80) and less than or equal to the radial height (108) of said inner surface (96) of said second cylindrical body sidewall (76) at said third shoulder (78).*

Claim 20 depends from claim 18 and is believed allowable for the reasons noted above. Furthermore, claim 20 defines a specific structural subcombination as set forth in detail above which is not reasonably taught in the references.

Consideration and allowance of claim 20 is respectfully requested.

### **Claim 21**

For the Examiner's convenience and to facilitate review, claim 21 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

21. *The cylindrical bodies according to claim 18 wherein said first and third increased radial heights (72 at the noted respective first and third shoulders 70 and 78) are substantially equal to each other, and said second and fourth increased radial heights (34 at the noted respective second and fourth shoulders 74 and 80) are substantially equal to each other.*

Claim 21 depends from claim 18 and is believed allowable for the reasons noted above. Furthermore, claim 21 defines a subcombination requiring that the first and third increased radial heights (72 at the noted respective first and third shoulders 70 and 78) are substantially equal to each other, and that the second and fourth increased radial heights (34 at the noted respective second and fourth shoulders 74 and 80) are substantially equal to each other.

Consideration and allowance of claim 21 is respectfully requested.

### **Claim 22**

For the Examiner's convenience and to facilitate review, claim 22 is set forth below with supporting disclosure reference numerals inserted in parenthesis.

22. *The cylindrical bodies according to claim 18 wherein said first cylindrical body sidewall (68) has inner and outer surfaces (29, 94), said outer surface (94) of said first cylindrical body sidewall (68) at said first flange (60) has a radial height (28) less than the radial height (34) of*

*said outer surface (94) of said first cylindrical body sidewall (68) at said second shoulder (74) and less than or equal to the radial height (72) of said outer surface (94) of said first cylindrical body sidewall (68) at said first shoulder (70), said second cylindrical body sidewall (68) has inner and outer surfaces (96, 98), said outer surface (98) of said second cylindrical body sidewall (76) at said second flange (62) has a radial height (72) less than the radial height (34) of said outer surface (98) of said second cylindrical body sidewall (76) at said fourth shoulder (80) and less than or equal to the radial height (72) of said outer surface (98) of said second cylindrical body sidewall (76) at said third shoulder (78), said inner surface (92) of said first cylindrical body sidewall (68) at said first flange (60) has a radial height (104) less than the radial height (106) of said inner surface (92) of said first cylindrical body sidewall (68) at said second shoulder (74) and less than or equal to the radial height (108) of said inner surface (92) of said first cylindrical body sidewall (68) at said first shoulder (70), said inner surface (96) of said second cylindrical body sidewall (76) at said second flange (62) has a radial height (108) less than the radial height (106) of said inner surface (96) of said second cylindrical body sidewall (76) at said fourth shoulder (80) and less than or equal to the radial height (108) of said inner surface (90) of said second cylindrical body sidewall (76) at said third shoulder (78), wherein the radial height of said outer surface of said sidewall of one of said first and second flanges (60, 62) is substantially equal to the radial height of the inner surface of said sidewall of the other of said first and second flanges (60, 62).*

Claim 22 depends from claim 18 and is believed allowable for the reasons noted above. Furthermore, claim 22 defines a specific structural combination as set forth in detail above which is not reasonably taught in the references.

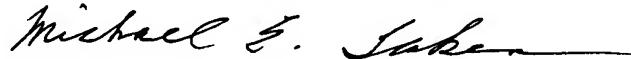
Consideration and allowance of claim 22 is respectfully requested.

Appl. No. 10/628,299  
Amendment dated February 1, 2006  
Reply to Office action of January 3, 2006

It is believed that this application is in condition for allowance with claims 1-15, 18-22, and such action is earnestly solicited.

Respectfully submitted,

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A handwritten signature in cursive script, reading "Michael E. Taken", followed by a horizontal line.

Michael E. Taken  
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